



IHTC 2015 is calling for a student design competition on Project OS-ARIS.

Project OS-ARIS (Open Source Avalanche Rescue Imaging System) is an IEEE Ottawa Section humanitarian technology initiative, in which its primary objective is to improve and adapt an open-source, low-cost, radar imaging system for snow avalanche search and rescue operations. The design is freely available from the MIT Open Course Ware Program under the popular Creative Commons licensing. While scanning the debris, this radar prototype will traverse a short distance across the disaster-stricken snow terrain along a suspended zip-line held up between a pair of sturdy vertical masts.

Student design challenge/competition i.e. to design add-on modules for the MIT radar prototype:

- (i) a DAQ for triggering the radar and storing the data,
- (ii) an IMU module for measuring and data logging the instantaneous physical position and orientation of the radar while it traverses along a suspended zip-line, or
- (iii) a very low-cost and efficient wideband Tx/Rx directive antenna pair to replace the Cantennas in the original radar prototype.

Judging criteria:

- Verified design, using theoretical calculations and/or software simulation (e.g. MATLAB, CAD TOOLS, etc.)
- Clarity of design ideas.
- Low cost and low power design using easily accessible (available) materials.
- Design to be adopted to as open source that is compatible with the Creative Commons license used by the MIT OCW design.
- Fabrication feasibility of the proposed hardware at the end of the competition.
- Ease of the integration into the MIT OCW design.

Interested groups are to submit an abstract to IHTC 2015

Prototypes to be ready for demo by the time of the IHTC conference (May 31 – June 3rd, 2015)

For more information, please feel free to contact: Dr. Kin Sze (Project Leader, IEEE HIC-Ottawa SIGHT Affinity Group) at kinsze@ieee.org, or Dr. Sawsan Abdul Majid (IEEE HIC students activities chair) at karimsawsan@yahoo.ca.